

Prior to further examination on the merits, please amend the above-identified application as follows:

IN THE CLAIMS

Please amend Claims 14-17, and add Claims 18-46 to read as follows. A marked-up copy of Claims 14-17, showing the changes made thereto, is attached. Note that all of the claims currently pending in this application, including those not presently being amended, are set forth below for the Examiner's convenience.

1. (Not Changed From Prior Version) A method for producing an electron-emitting device including a plurality of electrodes and an electroconductive film having an electron-emitting region, said film extending between the plurality of electrodes, wherein the electron-emitting region is formed by the steps of:

heating the electroconductive film; and

energizing the electroconductive film in an atmosphere comprising a gas for promoting cohesion of the electroconductive film.

2. (Not Changed From Prior Version) A method for producing an electron-emitting device including a plurality

of electrodes and an electroconductive film having an electron-emitting region, said film extending between the plurality of electrodes, wherein the electron-emitting region is formed by the steps of:

providing an electroconductive film; and

energizing the electroconductive film while heating the film in an atmosphere comprising a gas for promoting cohesion of the electroconductive film.

3. (Not Changed From Prior Version) The method according to Claim 1 or 2, wherein the gas for promoting the cohesion of the electroconductive film is a reducing gas.

4. (Not Changed From Prior Version) The method according to Claim 1 or 2, wherein the gas for promoting cohesion of the electroconductive film is  $H_2$ , CO or  $CH_4$ .

5. (Not Changed From Prior Version) The method according to Claim 1 or 2, wherein the gas for promoting the cohesion of the electroconductive film is  $H_2$ .

6. (Not Changed From Prior Version) The method according to Claim 1 or 2, wherein heating of said

electroconductive film is effected by heating a substrate on which the electroconductive film is placed.

7. (Not Changed From Prior Version) The method according to Claim 6, wherein the heating of the substrate is carried out at a temperature not more than 100 °C.

8. (Not Changed From Prior Version) The method according to Claim 6, wherein the heating of said substrate is carried out at a temperature in the range of 50 °C to 100 °C.

9. (Not Changed From Prior Version) The method according to Claim 1 or 2, wherein said electroconductive film is an electroconductive film formed through a step of dispensing a droplet containing a metallic compound onto a substrate.

10. (Not Changed From Prior Version) The method according to Claim 9, wherein the dispensing of the droplet onto the substrate is carried out by an ink jet method.

11. (Not Changed From Prior Version) The method according to Claim 1 or 2, wherein said electroconductive

film is an electroconductive film comprising a metallic oxide as a matrix.

12. (Not Changed From Prior Version) The method according to Claim 11, wherein said metallic oxide is palladium oxide.

13. (Not Changed From Prior Version) The method according to Claim 1 or 2, wherein said electron-emitting device is a surface conduction electron-emitting device.

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14. (Amended) A method for producing an electron source having a plurality of electron-emitting devices, comprising the steps of:

forming a plurality of electron-emitting devices by a method including the steps of:

heating an electroconductive film; and

energizing the electroconductive film in an atmosphere comprising a gas for promoting cohesion of the electroconductive film.

15. (Amended) A method for producing an image-forming apparatus comprising (a) an electron source having a plurality of electron-emitting devices and (b) an image-

forming member for forming an image under irradiation of electrons from the electron source, the method comprising the steps of:

forming a plurality of electron-emitting devices by a method including the steps of;

heating an electroconductive film; and

energizing the electroconductive film in an atmosphere comprising a gas for promoting cohesion of the electroconductive film.

16. (Amended) A method for producing an electron source having a plurality of electron-emitting devices, comprising the steps of:

forming a plurality of electron-emitting devices by a method comprising the steps of:

providing an electroconductive film; and

energizing the electroconductive film, while heating the film, in an atmosphere comprising a gas for promoting cohesion of the electroconductive film.

17. (Amended) A method for producing an image-forming apparatus comprising (a) an electron source having a plurality of electron-emitting devices and (b) an image-

forming member for forming an image under irradiation of electrons from the electron source, comprising the steps of:

forming a plurality of electron-emitting devices by a method including the steps of:

providing an electroconductive film; and

energizing the electroconductive film, while heating the film, in an atmosphere comprising a gas for promoting cohesion of the electroconductive film.

--18. (New) A method for producing an electron-emitting device including a plurality of electrodes and an electroconductive film having an electron-emitting region, said electroconductive film extending between the plurality of electrodes, wherein the electron-emitting region is formed by the steps of:

providing the electroconductive film; and

energizing the electroconductive film while heating the electroconductive film in an atmosphere comprising a gas for promoting cohesion of the electroconductive film, wherein, after the start of the energizing and the heating, the atmosphere including the gas for promoting cohesion of the electroconductive film is provided.

19. (New) A method for producing an electron-emitting device that includes a substrate, a plurality of electrodes, and an electroconductive film having an electron-emitting region, wherein the electroconductive film is disposed on the substrate and at least a portion of the electroconductive film extends between the plurality of electrodes, and wherein the electron-emitting region is formed by the steps of:

heating to a predetermined temperature the substrate on which the electroconductive film is disposed;

energizing the electroconductive film, wherein the energizing starts after the predetermined temperature is reached; and

controlling an atmosphere in which the heating and energizing steps are performed so that the atmosphere is set to one comprising a gas for promoting cohesion of the electroconductive film during the performance of the heating and energizing steps.

20. (New) The method according to any one of Claims 14 or 16, wherein the gas for promoting the cohesion of the electroconductive film is a reducing gas.

21. (New) The method according to any one of Claims 14 or 16, wherein the gas for promoting the cohesion of the electroconductive film is  $H_2$ , CO, or  $CH_4$ .

22. (New) The method according to any one of Claims 14 or 16, wherein the gas for promoting the cohesion of the electroconductive film is  $H_2$ .

23. (New) The method according to any one of Claims 14 or 16, wherein the heating of the substrate is carried out at a temperature of not more than approximately  $100^{\circ}C$ .

24. (New) The method according to any one of Claims 14 or 16, wherein the heating of the substrate is carried out at a temperature in the range of  $50^{\circ}C$  to  $100^{\circ}C$ .

25. (New) The method according to any one of Claims 14 or 16, further comprising the step of forming the electroconductive film by dispensing a droplet containing a metallic compound onto the substrate.



26. (New) The method according to Claim 25,  
wherein the dispensing of the droplet onto the substrate is  
carried out by an ink jet method.

27. (New) The method according to any one of  
Claims 14 or 16, wherein the electroconductive film comprises  
a metallic oxide having a matrix configuration.

28. (New) The method according to Claim 27,  
wherein the metallic oxide is palladium oxide.

29. (New) The method according to any one of  
Claims 14 or 16, wherein the electron-emitting device is a  
surface conduction electron-emitting device.

30. (New) A method for producing an electron  
source, comprising the steps of:  
forming a plurality of electron-emitting devices by  
a method including the steps of:  
forming an electroconductive film on a  
substrate;  
heating the substrate on which the  
electroconductive film is formed;  
energizing the electroconductive film; and

controlling an atmosphere so that a gas included in the atmosphere maintains a cohesion of the electroconductive film during at least part of the heating and energizing steps, wherein after the start of the energizing and heating steps, the atmosphere including the gas is provided, and wherein the gas promotes cohesion of the electroconductive film.

31. (New) A method for producing an image-forming apparatus comprising (a) an electron source having a plurality of electron-emitting devices and (b) an image-forming member for forming an image under irradiation of electrons from the electron source, the method comprising the steps of:

forming a plurality of electron-emitting devices by a method including the steps of:

forming an electroconductive film on a substrate;

heating the substrate on which the electroconductive film is formed;

energizing the electroconductive film; and

controlling an atmosphere so that a gas included in the atmosphere maintains cohesion of the electroconductive film during at least part of the heating

and energizing steps, wherein after the start of the energizing and heating steps, the atmosphere including the gas is provided, and wherein the gas promotes cohesion of the electroconductive film.

32. (New) A method for producing an electron source, comprising the steps of:

forming a plurality of electron-emitting devices by a method including the steps of:

forming an electroconductive film on a substrate;

heating to a predetermined temperature the substrate on which the electroconductive film is disposed;

energizing the electroconductive film, wherein the energizing step starts after the predetermined temperature is reached; and

controlling an atmosphere in which the heating and energizing steps are performed so that the atmosphere is set to one comprising a gas for promoting cohesion of the electroconductive film during the performance of the heating and energizing steps.

33. (New) A method for producing an image-forming apparatus comprising (a) an electron source having a

plurality of electron-emitting devices and (b) an image-forming member for forming an image under irradiation of electrons from the electron source, the method comprising the steps of:

forming a plurality of electron-emitting devices by a method including the steps of:

forming an electroconductive film on a substrate;

heating to a predetermined temperature the substrate on which the electroconductive film is disposed;

energizing the electroconductive film, wherein the energizing starts after the predetermined temperature is reached;

controlling an atmosphere in which the heating and energizing steps are performed so that the atmosphere is set to one comprising a gas for promoting cohesion of the electroconductive film during the performance of the heating and energizing steps.

34. (New) The method according to Claim 6, wherein the heating of said substrate is conducted at a temperature of not higher than 150°C.

35. (New) The method according to Claim 23,  
wherein the heating of said substrate is conducted at a  
temperature of not higher than 150°C.

36. (New) The method according to any one of  
Claims 15-17, wherein the gas for promoting the cohesion of  
the electroconductive film is a reducing gas.

37. (New) The method according to any one of  
Claims 15-17, wherein the gas for promoting cohesion of the  
electroconductive film is H<sub>2</sub>, CO or CH<sub>4</sub>.

38. (New) The method according to any one of  
Claims 15-17, wherein the gas for promoting the cohesion of  
the electroconductive film is H<sub>2</sub>.

39. (New) The method according to any one of  
Claims 15-17, wherein heating of said electroconductive film  
is effected by heating a substrate on which the  
electroconductive film is placed.

40. (New) The method according to Claim 39,  
wherein the heating of the substrate is carried out at a  
temperature not more than 100 °C.

41. (New) The method according to Claim 39,  
wherein the heating of said substrate is carried out at a  
temperature in the range of 50 °C to 100 °C.

42. (New) The method according to any one of  
Claims 15-17, wherein said electroconductive film is an  
electroconductive film formed through a step of dispensing a  
droplet containing a metallic compound onto a substrate.

43. (New) The method according to Claim 42,  
wherein the dispensing of the droplet onto the substrate is  
carried out by an ink jet method.

44. (New) The method according to any one of  
Claims 15-17, wherein said electroconductive film is an  
electroconductive film comprising a metallic oxide as a  
matrix.

45. (New) The method according to Claim 44,  
wherein said metallic oxide is palladium oxide.

46. (New) The method according to any one of  
Claims 15-17, wherein said electron-emitting device is a  
surface conduction electron-emitting device.--